



TURFGRASS INSECTS: MONITORING INSECTS ON LAWNS

One of the first steps in conducting an Integrated Pest Management (IPM) program is to monitor the activity of weeds, diseases, and insects regularly. For lawns in the Northeast, monitoring every two to three weeks throughout the growing season should be sufficient for detecting most insect populations. The purpose of this fact sheet is to describe some techniques which can be used to monitor insects.

WHITE GRUBS

Japanese beetle grubs and their relatives (European chafers, Asiatic garden beetles, Oriental beetles) are active in the soil during April and May and again from early August through October. The grubs are cream-colored and normally C-shaped, with a brown head and three pairs of legs. The easiest way to sample for grubs is to dig a square about 6 inches on a side and about 4 to 6 inches deep. Flip the sod upside down onto a flat surface (a plywood sheet or a piece of cardboard does nicely). Use a hand trowel to break up clumps of soil in the ground or attached to the roots. Remove any grubs you find and put them in a plastic cup or dish pan to count after you have finished. Be sure to beat the soil and roots on the bottom of the sod with the edge of the trowel. Many grubs will congregate in the thick roots

just below the thatch, or will be just in the thatch, near the soil line.

In the spring (April and May) and again in autumn (September and October), the grubs will be at least a half inch long and very easy to find. In late July and early August, they will be much smaller and very close to the root-thatch interface, so you must look very carefully.

Normally a healthy turf should be able to tolerate at least eight to ten grubs per square foot without visible weakening. If there are other stresses (such as drought, heavy traffic), the turf may be weakened with as few as five grubs per square foot. Note that some species of grubs are more aggressive or damaging than others. As a general rule, European chafers cause more damage than other species and so the tolerance level will be slightly lower.

CHINCH BUGS

Chinch bugs are small, relatively soft-bodied insects which remain active in the thatchy area just above the crowns of the turf plants. They are most easily monitored by inserting one end of a coffee can down into the soil about two or three inches. (You may have to pound the can in with a mallet or soften the soil a little first by watering the area.) Fill the cylinder with

water (if possible, use a garden hose with moderate pressure) and wait about five minutes. An alternative approach is to cut a 4 inch square of turf, place the sample in a bucket, and fill the bucket with water. The chinch bugs will float to the surface of the water, where you can count them. Chinch bugs are most active in sunny areas with some water stress. Conduct your sampling at the edges of droughty patches. Sampling should be conducted from mid June through the end of August.

SOD WEBWORMS

Sod webworms are caterpillars which reach an inch in length and feed on the blades of grass. Sod webworms feed actively at night and are virtually impossible to find during the daytime if you merely inspect the turf. However, webworms can be forced to the surface by using an "irritating drench," also known as a "soapy flush." Put one or two tablespoons of a liquid lemon scented dish detergent in two gallons of water and pour this solution over an area roughly two feet by two feet. The solution irritates webworm caterpillars to leave their burrows and come to the surface within five minutes, where they can be counted. Sample in July and August. If you sample at mid-day on a hot,

sunny day, rinse the area with clear water after you have completed the drench test. Otherwise the soapy solution might burn the turf.

BLUEGRASS BILLBUGS

Bluegrass billbugs can cause serious damage to lawns, particularly those which are predominantly bluegrass. They occur sporadically in New England. The damage they cause is often misdiagnosed as drought stress. One way to sample for billbugs is to walk along the driveway or sidewalk on a warm, sunny day in late May to mid June. Bend over and observe insect activity on the pavement. Bluegrass billbug adults are black beetles with very elongated “snouts.” The total body length is about 1/4-to 3/8 -inch and the tail end is somewhat pointed. If you find an average of more than two billbugs for each minute of your search, the likelihood exists that those adults will produce enough offspring in the coming month to cause visible damage to the turf.

Billbugs may also be monitored using a pitfall trap. Place a 12 oz. plastic cup in the ground so that the lid is flush with the soil surface. Add a small amount of water (2-3 oz.) to the cup and check every 3 days. If more than 10 billbugs are collected within 2 weeks, you are likely to see damage later.

In addition, billbug larvae deposit fecal matter which looks very much like sawdust into the thatch. If a finger inspection of the turf reveals sawdust-like material, this serves as a strong indication that billbug larvae are present. Usually the larvae themselves will be found in the lower part of the thatch. Inspect the area in a manner similar to that described for white grubs. Larvae are active from late June through August.

OTHER INSECTS

Other insects will be observed during your inspections. Keep in mind that many of these insects are actively beneficial, either by feeding on some of the pest species or by playing a significant role in the breakdown of organic matter in the food chain. One of the most commonly observed insects in a lawn is the ground beetle. Actually there are many species of ground beetles, each of which is an active predator on a variety of soft bodied insects. One of the most common species is about 1/4-to 3/8 -inch long, somewhat broad and flattened, with a very shiny coppery color. This insect moves rapidly along the surface of the turf, especially on sunny days.

Information on life cycle and management of specific turf damaging insects can be found in other TURF IPM FACTS fact sheets.

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